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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,325	02/21/2001	Paul Andrew Evans	36-1410	5030

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Nixon & Vanderhye
8th Floor
1100 North Glebe Road
Arlington, VA 22201-4714

EXAMINER	
LIEN, TAN	
ART UNIT	**PAPER NUMBER**
2141	4

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/763,325	Applicant(s) EVANS ET AL.
	Examiner Tan Lien	Art Unit 2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02/21/2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☒ Claim(s) *1* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on *02/21/2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Europe on 09/18/1998. It is noted, however, that applicant has not filed a certified copy of the 98307623.3 application as required by 35 U.S.C. 119(b).

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The abstract of the disclosure is objected to because it is not known what "the same" is meant on page 20, line 4. Correction is required. See MPEP § 608.01(b).

Claim Objections

Claim(s) 1 is/are objected to because of the following informalities:

Claim 1: On page 16, lines 14-21, the limitations of the transmitter are awkward. This claim is a method described with steps, but the transmitter limitation does

not limit any step, rather it limits an apparatus, the transmitter, in the claim preamble.

On page 16, line 12, said network lacks antecedent basis. I will assume it is a multicast-capable network since it is the only type of network mentioned in claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim(s) 1, 3,7-9, and 11 is/are rejected under 35 U.S.C. 102(b) as being anticipated by Virgile (US Patent 5,608,726).

Claim(s) 1: Virgile discloses a method of operating a transmitter to transmit a data block to a plurality of recipients selected from a plurality of receivers connected to said transmitter via a multicast-capable network, said method comprising:

finding a multicast address to which said data block is to be sent, said multicast address being suitable for use in said multicast-capable network (col. 7, lines 50-67 thru col. 8, lines 1-12);

addressing said data block to said multicast address (col. 5, lines 37-65; wherein the multicast packet is the data block and multicast forwarding table is addressing all the hosts that want to be in the multicast group); and

transmitting said data block over said network (col. 5, lines 31-35; wherein the campus network is the environment for transmitting packets);

said method being characterized in that:

said transmitter has access to one or more directories storing:

a) a plurality of lists of receiver identifiers (FIG. 4, ref. 216 shows a list of hosts wherein the hosts {h108, h109, and h110} are receiver identifiers in the multicast forwarding table. FIG. 4, ref. 236 shows another list); and

b) for each of said lists, a multicast-address suitable for use in said multicast-capable network (FIG. 4, ref. 210, 220, 230...; wherein each table entry includes a multicast destination address index field {ref. 212, 222, 232...} which is suitable for use in finding the multicast address); and

said multicast address finding step comprising:

a) obtaining a list of receiver identifiers(FIG. 5 and col. 8, lines 13-52; wherein the process in FIG. 5 shows how to obtain a list of hosts via a leave or join host group packet), said list corresponding to the set of recipients to which said data block is to be sent (FIG. 4 and col. 5, lines 49-53; wherein the receiver identifiers are the hosts {h with number} and set of recipients is listed in each row of the LIST FIELD column); and

b) examining said one or more directories to find a multicast address corresponding to the list of receiver identifiers obtained in step a) (col. 10, lines 43-57; wherein each list of host is a directory and each host is a receiver identifier. The processor uses the multicast destination address as an index to retrieve a corresponding entry from the multicast forwarding table {col. 10, line 52-54}, so the processor must have examine the directory in the multicast forwarding table to find a multicast address corresponding to the list of hosts).

Claim(s) 3: Virgile discloses a method according to claim 1 wherein said obtaining step involves:

a) determining that a general data block is to be sent to recipients included in one or more of a selected plurality of said lists (FIG. 4 shows host h109 as one of the recipients included in list 216, 236, 266, and 276); and

b) unifying said selected plurality of lists to find a unified list of receiver identifiers (FIG. 4 shows the multicast forwarding table unifying plurality of lists of hosts).

Claim(s) 7: Virgile discloses a method according to claim 1 wherein

said transmitter has access to a plurality of group directories for respective groups of receivers (FIG. 4 shows that the bridge has at least read access to the multicast forwarding table in order to route packets to the appropriate destinations. Each row entry is a directory group falling into a multicast group which has hosts as receivers in the list field).

Claim(s) 8: Virgile discloses a method according to claim 1 wherein

the format of said multicast address is in accordance with the Internet Protocol suite (col. 1, lines 36-42; Looking at FIG. 1, as the data block travels from a host in one branch of the hierarchical network to multicast destinations in other branches of the hierarchical network, the data block has to go across the backbone or even the WAN, and the communications among the routers on the WAN and on the backbone network is in accordance with the IP suite).

Claim(s) 9: Virgile discloses a transmitter operable to transmit data block to a set of recipient computers selected from a plurality of receiver computers connectable to said transmitter computer via a multicast-capable network, said apparatus comprising:

an output connectable to said network (FIG. 3 shows I/Os and links to other network nodes);

one or more processors (FIG. 3, ref. 120);

a program store storing instructions executable by said one or more processors to transmit the data block via said output over said network (col. 7, lines 19-35; wherein there exists a program that execute the steps perform by the processor);

said set of instructions being executable to transmit the data block by:

finding a multicast address to which said data block is to be sent, said multicast address being suitable for use in said multicast-capable network (col. 7, lines 50-67 thru col. 8, lines 1-12);

addressing said data block to said multicast address (col. 5, lines 37-65; wherein the multicast packet is the data block and multicast forwarding table is addressing all the hosts that want to be in the multicast group); and

transmitting said data block over said network (col. 5, lines 31-35; wherein the campus network is the environment for transmitting packets);

said transmitter being characterized by:

having access to a directory (FIG. 4 show a multicast forwarding table stored in the bridge) store storing:

a) list data representing lists of receiver identifiers (FIG. 4, ref. 216); and

b) for each of said lists, a multicast address suitable for use in said multicast-capable network (FIG. 4, ref. 212 and col. 7, lines 52-55); and

said set of instructions being executable to find said multicast address by:

a) obtaining a list of receiver identifiers (FIG. 5 and col. 8, lines 13-52; wherein the process in FIG. 5 shows how to obtain a list of hosts via a leave or join host group packet), said list corresponding to the set of recipients to which said data block is to be sent (FIG. 4, ref. 216 and col. 5, lines 49-53; wherein the receiver identifiers are the hosts {h with number} and set of recipients is listed in each row of the LIST FIELD column); and

b) examining said one or more directories to find a multicast address corresponding to the list of receiver identifiers obtained in step a) (col. 10, lines 43-57; wherein each list of host is a directory and each host is a receiver

identifier. The processor uses the multicast destination address as an index to retrieve a corresponding entry from the multicast forwarding table {col. 10, line 52-54}, so the processor must have examine the directory in the multicast forwarding table to find a multicast address corresponding to the list of hosts).

Claim(s) 11: Virgile discloses a program storage device readable by a processing apparatus, said device embodying a program of instructions executable by the processing apparatus to perform method steps for transmitting a data block over a network to a set of recipients selected from a plurality of receivers, said method steps comprising steps according to claim 1 (Since Virgile teaches the method performing the steps and limitations in claim 1, then it is inherent that there must be a storage device that stores the program in the network node).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim(s) 2 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Virgile as applied to claim 1 above, and further in view of Takiyasu et al (US Patent 4,792,947), hereinafter referred to as Takiyasu.

Claim(s) 2: Virgile discloses a method according to claim 1, but fails to disclose the obtaining step comprises:

a) receiving one or more indications that an earlier data block addressed to a selected set of receivers was not successfully received by one or more of said set of receivers; and

b) analyzing said indications to generate a list of receiver identifiers, each receiver identifier in said list identifying a recipient that did not successfully receive said earlier data block.

Takiyasu, however, discloses receiving indications that an earlier data block addressed to a selected set of receivers was not successfully received by a set of receivers (col. 7, lines 2-7 of Takiyasu; wherein the indications are the failures to return responses to the sender node in a predefined period of time) and analyzing the indications to generate a list of receiver identifiers which did not successfully receive the data block (col. 7, lines 2-7 of Takiyasu; wherein after a predefined period of time the sender node will generate a list of fail nodes to retransmit the packets). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Virgile's method of multicasting with Takiyasu's method of obtaining and analyzing the indications of failure. The reason why Virgile would want to do that is because Virgile wants to find out which network node fails to accept the multicast packet and will retransmit if the node is ready to receive it.

Claim(s) 4-6, 10 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Virgile as applied to claim 1 above, and further in view of Reams (US Patent 5,907,793).

Claim(s) 4, 10: Virgile discloses a method according to claim(s) 1 and 9 above, and teaches

a packet header containing a multicast destination address and transmitter's ability to write the multicast destination address into the packet header (col. 11, lines 33-37) and a list of receiver identifiers associated to a multicast group indexed in the index field column of FIG. 4 of Virgile. Virgile fails to disclose finding a type identifier associated with said data block, and examining said type data. Reams, however, discloses type identifier associated with data block and examining the type (col. 18, lines 40-48 of Reams; wherein the type identifier is the type code falling under a subject category in the data packet header. In order to determine the type code, a device must be able to examine the type field). It would be obvious to one of ordinary skill at the time of the invention to modify Virgile's teaching of packet headers with Reams' teaching of type identifiers in the packet header. The reason why Virgile would want to modify is because Virgile wants to discriminate among the type of program listing or subjects the packet is associated with (col. 18, lines 39-48 of Reams).

Claim(s) 5: Virgile discloses a method according to claim 4, and

in the rejection of claim 4, Reams discloses the type to be a subject type. Therefore, it is rejected under the same basis as claim 4.

Claim(s) 6: Virgile discloses a method according to claim 4

and further teaches extracting a information from a data block received from a transmitter (col. 11, lines 33-37 of Virgile; Virgile teaches writing a multicast address into a packet header. It is known to one of ordinary skill in the art at the time of the invention that when a data block traverse from one network node to another, the node extracts headers if that data block is going up the protocol stack and append header information if the data block is going down the protocol stack. The data block goes up and down the protocol stack as it hops from one node to another, thus, appending and extracting header information as it hops across the network). Virgile fails to teach extracting a type identifier from a data block. Reams, however, teaches about a type code or identifier in a packet header of a data block (col. 18, lines 42-47 of Reams). In Reams' teaching, since the type code for the subject category is in the packet header then it is obvious that the limitation of claim 6 reads on the combination. It is obvious to one of ordinary skill in the art at the time of the invention to use Virgile's extracting method to extract Reams' type code of the packet header. The reason why Virgile would want to do so is because Virgile wants to examine the type of subject category the type code belongs in (col. 18, lines 42-47).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim(s) 12 is/are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim(s) 12: What is being claimed here?

If a computer program comprising the steps in claim 1, then the claim is nonstatutory. The claim 12 is a software per se and therefore is not tangibly embodied.

If a medium embodying a computer program is claimed, then the claim is no different from claim 11.

If a program containing the steps of claim 1 executed by a computer is claimed, then the claim is no different from claim 1. Claim 1 is a method that is executed by some sort of computer.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Tan Lien whose telephone number is (703) 305-6018. The examiner can normally be reached on Monday-Thursday from 8:30am to 6pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia, can be reached at (703) 305-4003. The fax phone number for this Group is (703) 305-3718.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [tan.lien@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER